

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (currently amended) — Process In a process for synthesis of hydrocarbons comprising conducting a by Fischer-Tropsch reaction starting from a synthesis gas, in a reaction zone (1) containing a reaction medium at a predetermined pressure and temperature, said reaction medium comprising the said synthesis gas and a catalyst in a fluidized bed and operating in three-phase fluidization, in which process and a boilable coolant is circulated in at least one heat-exchange zone (2) internal to the reaction zone and immersed within said fluidized bed, characterized in that the improvement wherein the boilable coolant is introduced into the heat-exchange zone (2) at a temperature close to its the boiling point of said coolant at the pressure of the reaction medium, this said boiling point being situated in a range of 10 to 70°C below the temperature of the reaction medium, and preferably in a range of 15 to 60°C below the temperature of the reaction medium.

2 (currently amended) - Process A process for hydrocarbons synthesis according to claim 1 wherein the pressure of the reaction medium is between 20 and 60 bar, preferably between 30 and 50 bar, and the temperature of the reaction medium is between 200 and 250°C, and preferably between 220 and 240°C.

3 (currently amended) — Process A process for hydrocarbons synthesis according to claim 1—one of claims 1 to 2 wherein the coolant used in the heat-exchange zone (2) is chosen from among the following compounds: comprising methanol, ethanol or any mixture of these compounds, mixtures thereof.

4 (currently amended) —Process A process for hydrocarbons synthesis according to claim 3 ~~one of claims 1 to 3~~ claim 1, wherein the coolant introduced in the heat-exchange zone (2) comprises water in a proportion of less than 85% by weight of ~~the said coolant, and preferably in a proportion of less than 70% of the said mixture.~~

5 (currently amended) —Process A process for hydrocarbons synthesis according to ~~one of claims 1 to 4~~ claim 1 wherein the heat-exchange zone (2) is constituted by comprises an immersed heat exchanger comprising a tube bundle ~~of which~~ having [the] a heat exchange surface density, that is to say the exchange surface per m^2 of reactor volume, [is] between 10 and 30 m^2/m^3 , and preferably between 15 and 25 m^2/m^3 .

6 (currently amended) —Process A process for hydrocarbons synthesis according to claim 1~~one of claims 1 to 5~~, wherein the coolant is introduced at least in part in the liquid state into the heat-exchange zone (2) and is partially vaporized in the said zone, the resultant vapor is condensed at least in part in at least one condensation zone (8), and the liquid phase resulting from the said condensation is recycled at least in part into the heat-exchange zone (2).

7 (currently amended) —Process A process according to claim 6 wherein the condensation zone (8) comprises a liquid/vapour separation zone (5), the partially vaporized coolant is passed into the separation zone (5), a gas phase (6) is recovered which is condensed in the condensation zone (8), and a liquid phase (7) which is recycled with the liquid phase originating in the zone (8) into the heat-exchange zone (2).

8 (currently amended) —Process A process according to one of claims 6 to 7 claim
7 wherein the coolant-condensing zone (8) comprises a tube bundle using water as
coolant, a vapour phase of which, extracted at the top of the said tube bundle, is
condensed in a separation zone (13) situated above the condensation zone (8), and
a liquid phase of which is drawn off from the separation zone (13) and recycled
into the tube bundle of the condensation zone (8).

9 —Process A process according to one of claims 6 to 8 wherein claim 7 further
comprising expanding a vapour phase of the coolant is recovered at the top of the
condensation zone (8), which is expanded from the separation zone (5) in at least
one turbine (24), subjecting the thus-expanded liquid/vapour mixture is cooled
and condensed; cooling and condensation; separation the liquid phase of the thus-
obtained coolant is separated, and recycling the separated liquid phase and it is
recycled into the condensation zone (8).

10 —Process A process according to one of claims 1 to 9 claim 1 wherein the
temperature of the reaction medium is controlled by means of a dynamic control
system acting on the pressure or on the flow rate of the coolant, so as to remain on
the chosen operating point, even if this is unstable.

11. (New) A process according to Claim 1 wherein said boiling point is 15 to
60°C below the temperature of the reaction medium.

12. (New) A process according to Claim 2 wherein the pressure of the reaction
medium is between 30 and 50 bar and the temperature of the reaction medium is
between 220 and 240°C.

13. (New) A process according to Claim 4 wherein the coolant comprises less
than 70% by weight of water.

14. (New) A process for hydrocarbons synthesis according to Claim 2, wherein the coolant used in the heat-exchange zone (2) comprising methanol, ethanol or - mixtures thereof.

15. (New) A process for hydrocarbons synthesis according to Claim 4, wherein the coolant used in the heat-exchange zone (2) comprising methanol, ethanol or - mixtures thereof.

16. (New) A process for hydrocarbons synthesis according to Claim 11, wherein the coolant used in the heat-exchange zone (2) comprising methanol, ethanol or - mixtures thereof.

17. (New) A process for hydrocarbons synthesis according to Claim 12, wherein the coolant used in the heat-exchange zone (2) comprising methanol, ethanol or - mixtures thereof.

18. (New) A process for hydrocarbons synthesis according to Claim 13, wherein the coolant used in the heat-exchange zone (2) comprising methanol, ethanol or - mixtures thereof.